IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

Claim 1. (currently amended): A photoelectric converter comprising a plurality of pixels each comprising a sensor element for converting incident light into an electrical signal[[,]] and a plurality of thin film transistors connected to the sensor element,

wherein ~~an electrode of the sensor element connected to the thin film transistor is disposed above the thin film transistor, and~~ the thin film transistors have ~~has~~ a top gate type structure in which a semiconductor layer, a gate insulating layer, and a gate electrode layer are laminated successively on a substrate, and an electrode of the sensor element connected to the thin film transistor is disposed above the thin film transistor, and

wherein the electrode of the sensor element covers each channel region of the plurality of thin film transistors, and the thin film transistors are connected in series with one another and use a same gate wiring.

Claim 2. (cancelled).

Claim 3. (currently amended): A photoelectric converter according to claim [[2]] 1, wherein the plurality of thin film transistors comprise: a plurality of transferring thin film transistors for transferring electrical signals from the sensor elements, respectively; and a plurality of resetting thin film transistors for resetting the sensor elements, respectively.

Claim 4. (currently amended): A photoelectric converter according to claim [[2]] 1, wherein the plurality of thin film transistors comprise: a plurality of amplifying thin film transistors for receiving as their inputs electrical signals from the sensor elements, respectively; a plurality of transferring thin film transistors for outputting the electrical signals, respectively; and a plurality of resetting thin film transistors for resetting the sensor elements, respectively.

Claim 5. (currently amended): A photoelectric converter according to claim [[2]] 1, wherein ~~each of~~ the channel regions of the plurality of thin film transistors [[is]] are wider than ~~each of~~ the gate electrodes of the plurality of thin film transistors.

Claim 6. (previously presented): A radiation image pickup device, comprising: the photoelectric converter as claimed in claim 1; and a conversion unit provided on a light incidence side of the photoelectric converter for converting radiation into light.

Claim 7. (currently amended): A radiation image pickup device comprising a plurality of pixels each comprising a sensor element for converting radiation into an electrical signal[[,]] and a plurality of thin film transistors connected to the sensor element,

wherein ~~an electrode of the sensor element connected to the thin film transistor is disposed above the thin film transistor, and~~ the thin film transistors have ~~has~~ a top gate type structure in which a semiconductor layer, a gate insulating layer, and a gate electrode layer are laminated successively on a substrate, and an electrode of the sensor element connected to the thin film transistor is disposed above the thin film transistor, and

wherein the electrode of the sensor element covers each channel region of the plurality of thin film transistors, and the thin film transistors are connected in series with one another and use a same gate wiring.

Claim 8. (cancelled).

Claim 9. (original): A radiation image pickup device according to claim 7, wherein a storage capacitor is connected to the sensor element.

Claim 10. (currently amended): A radiation image pickup device according to claim [[8]] 7, wherein the plurality of thin film transistors comprise: a plurality of transferring thin film transistors for transferring electrical signals from the sensor elements, respectively; and a plurality of resetting thin film transistors for resetting the sensor elements, respectively.

Claim 11. (currently amended): A radiation image pickup device according to claim [[8]] 7, wherein the plurality of thin film transistors comprise: a plurality of amplifying thin film transistors for receiving as their inputs electrical signals from the sensor elements, respectively; a plurality of transferring thin film transistors for outputting the electrical signals, respectively; and a plurality of resetting thin film transistors for resetting the sensor elements, respectively.

Claim 12. (currently amended): A radiation image pickup device according to claim [[8]] 7, wherein ~~each of~~ the channel regions of the plurality of thin film transistors [[is]] are wider than ~~each of~~ the gate electrodes of the plurality of thin film transistors.

Claim 13. (withdrawn): A radiation image pickup device in which pixels comprising at least: a plurality of semiconductor conversion elements for converting radiation into electric charges; and a plurality of thin film transistors (TFTs) formed below the plurality of semiconductor conversion elements are disposed in matrix on an insulating substrate,

wherein the thin film transistor has source and drain electrodes, a impurity doped semiconductor layer, a semiconductor layer, an insulating layer, and a gate electrode formed in this order on the insulating substrate.

Claim 14. (withdrawn): A radiation image pickup device according to claim 13, wherein the gate electrode of the thin film transistor is formed so as to overlap the source and drain electrodes.

Claim 15. (withdrawn): A radiation image pickup device according to claim 13, wherein the gate electrode of the thin film transistor is formed so as not to overlap the source and drain electrodes.

Claim 16. (withdrawn): A radiation image pickup device according to claim 13, wherein the source and drain electrodes of the thin film transistor are covered with the impurity doped semiconductor layer.

Claim 17. (withdrawn): A radiation image pickup device according to claim 13, wherein an insulating layer is formed between the insulating substrate and the thin film transistors.

Claim 18. (withdrawn): A radiation image pickup device according to claim 17, wherein the insulating layer formed between the insulating substrate and the thin film transistors is made of any one of SiN, SiO2, and SiON.

Claim 19. (withdrawn): A radiation image pickup device in which pixels comprising: a wavelength conversion unit for wavelength-converting radiation; a plurality of semiconductor conversion elements for converting the wavelength-converted radiation into electric charges; and a plurality of thin film transistors formed below the semiconductor conversion elements are disposed in matrix on an insulating substrate,

wherein the thin film transistor has source and drain electrodes, a impurity doped semiconductor layer, a semiconductor layer, an insulating layer, and a gate electrode formed in this order on the insulating substrate.

Claim 20. (previously presented): A radiation image pickup system comprising:

the radiation image pickup device as claimed in claim 7;

processing means for generating an image as an object for image pickup on the basis of electrical signals obtained from the radiation image pickup device; and

display means for displaying the image generated by the processing means.

Claim 21. (new): A radiation image pickup system comprising: the radiation image pickup device as claimed in claim 7; processing means for generating an image as an object for image pickup on the basis of electrical signals obtained from the radiation image pickup device; and display means for displaying the image generated by the processing means.

Claim 22. (new): A photoelectric converter according to claim 1, wherein the electrode of the sensor element covers the semiconductor layer of the plurality of thin film transistors.

Claim 23. (new): A photoelectric converter according to claim 1, wherein two interlayer insulating layers are disposed between the electrode of the sensor element electrically connected to the plurality of thin film transistors and gate electrodes of the plurality of thin film transistors, and a single interlayer insulating layer is disposed between the electrode of the sensor element electrically connected to the plurality of thin film transistors and a wiring electrically connected to the plurality of thin film transistors.